IN THE CLAIMS

Please amend the claims as follows:

1 (Currently Amended). A microphotonic device comprising:

a deformable membrane structure that can experience strain using a plurality of thin-film actuators that is directly formed on said deformable membrane, said strain is continuous in the strain direction, said deformable membrane provides mechanical support for said microphotonic device while providing high dielectric contrast ~~with~~ relative to air underneath said deformable membrane; and

a waveguide element formed on said deformable membrane structure so that when said deformable membrane structure is strained, said waveguide element is tuned to a selective amount.

2 (Previously Presented). The microphotonic device of claim 1, wherein said deformable membrane structure comprises a sub-micron SiO_2 layer.

3 (Original). The microphotonic device of claim 1, wherein said waveguide element comprises a microring resonator.

4 (Original). The microphotonic device of claim 1, wherein said waveguide element comprises a microracetrack resonator.

5 (Original). The microphotonic device of claim 1, wherein said waveguide element comprises a 1-dimensional photonic crystal.

6 (Original). The microphotonic device of claim 1, wherein said waveguide element comprises a 2-dimensional photonic crystal.

7 (Original). The microphotonic device of claim 5, wherein said 1-dimensional photonic crystal comprises holes.

8 (Original). The microphotonic device of claim 7, wherein said selective amount comprises approximately 1%.

9 (Original). The microphotonic device of claim 3, wherein said selective amount comprises 0.2%.

10 (Previously Presented). The microphotonic device of claim 1 further comprising at least one piezoelectric actuator that is coupled to said deformable membrane so as to produce said strain.

11 (Currently Amended). A method of forming a microphotonic device comprising:

forming a deformable membrane structure that can experience strain using a plurality of thin-film actuators that is directly formed on said deformable membrane, said strain is continuous in the strain direction, said deformable membrane provides mechanical support for said microphotonic device while providing high dielectric contrast ~~with~~ relative to air underneath said deformable membrane; and

forming a waveguide element on said deformable membrane structure so that when said deformable membrane structure is strained said waveguide element is tuned to a selective amount.

12 (Previously Presented). The method of claim 11, wherein said deformable membrane structure comprises a sub-micron SiO_2 layer.

13 (Original). The method of claim 11, wherein said waveguide element comprises a microring resonator.

14 (Original). The method of claim 11, wherein said waveguide element comprises a microracetrack resonator.

15 (Original). The method of claim 11, wherein said waveguide element comprises a 1-dimensional photonic crystal.

16 (Original). The method of claim 11, wherein said waveguide element comprises a 2-dimensional photonic crystal.

17 (Original). The method of claim 15, wherein said 1-dimensional photonic crystal comprises holes.

18 (Original). The method of claim 17, wherein said selective amount comprises approximately 1%.

19 (Original). The method of claim 13, wherein said selective amount comprises 0.2%.

20 (Previously Presented). The method of claim 11 further comprising providing at least one piezoelectric actuator that is coupled to said deformable membrane so as to produce said strain.